CLAIMS

1. A Group III nitride semiconductor device comprising a substrate, and a plurality of Group III nitride semiconductor layers provided on the substrate, wherein a first layer which is in contact with the substrate is composed of silicon-doped $Al_xGa_{1-x}N$ ($0 \leq x \leq 1$).

2. A Group III nitride semiconductor device according to claim 1, wherein the first layer contains silicon in an amount of 1×10^{16} to 1×10^{19} atoms/cm^3.

3. A Group III nitride semiconductor device comprising a substrate, and a plurality of Group III nitride semiconductor layers provided on the substrate, wherein a first layer which is in contact with the substrate is composed of $Al_xGa_{1-x}N$ ($0 \leq x \leq 1$), and the difference in height between a protrusion and a depression which are present at the interface between the first layer and a second layer provided thereon is 10 nm or more and is equal to, or less than, 99% the thickness of the first layer.

4. A Group III nitride semiconductor device according to any one of claims 1 through 3, wherein the first layer has a structure formed of aggregated columnar crystal grains.

5. A Group III nitride semiconductor device according to claim 4, wherein each of the columnar crystal grains has a width of 10 to 100 nm.

6. A Group III nitride semiconductor device according to any one of claims 1 through 5, wherein the first layer has a thickness of 20 nm to 200 nm.

7. A Group III nitride semiconductor light-emitting device comprising a substrate; an n-type layer, a light-emitting layer, and a p-type layer, which are composed of a Group III nitride semiconductor single crystal and are provided on the substrate in this order; a negative electrode provided on the n-type layer; and a

positive electrode provided on the p-type layer, wherein there is a layer composed of silicon-doped $Al_xGa_{1-x}N$ ($0 \leq x \leq 1$) in contact with the substrate.

8. A Group III nitride semiconductor light-emitting device according to claim 7, wherein the silicon-doped $Al_xGa_{1-x}N$ ($0 \leq x \leq 1$) layer has a structure formed of aggregated columnar crystal grains.

9. A method for producing a Group III nitride semiconductor device, which method comprises a first step of depositing, on the surface of a substrate, a layer containing fine Group III metal particles containing silicon; a second step of nitridizing the fine particles in an atmosphere containing a nitrogen source; and a third step of growing a Group III nitride semiconductor single crystal on the thus-nitridized fine particles.

10. A method for producing a Group III nitride semiconductor device according to claim 9, which further comprises, between the first and second steps, an annealing step of heating the fine particles in an atmosphere containing hydrogen gas and/or nitrogen gas.